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10/772,369	02/06/2004	Toshimitsu Usui		6787

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EXAMINER

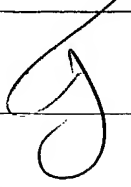
BEHREND, HARVEY E

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 07/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/772,369	Applicant(s) USUI ET AL.	
	Examiner Harvey E. Behrend	Art Unit 3641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 5-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/6/04</u> | 6) <input type="checkbox"/> Other: ____ |

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1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 5-10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

There is no adequate description nor enabling disclosure of how and in what manner, the lower drywell can be disposed in a lower portion of the pressure vessel (see claim 5).

According to the specification on page 10 lines 4+, the lower drywell 81 is arranged in the center of the reactor containment 80 and, the lower portion of the reactor pressure vessel extends into the lower drywell.

There is no adequate description nor enabling disclosure of what all is meant by and is encompassed by the recitation in claim 5 of "a side of a motor portion" of said reactor recirculation pump is projected into said lower drywell.

According to Fig. 5 and the specification on page 8 lines 21+, the whole motor 70 of pump 1 is disposed outside the pressure vessel and thus the whole motor 70 is disposed in the lower drywell.

Claim 8 lines 3-4 recites "heat exchangers through which cooling water circulated by said reactor circulation pumps flows".

The only reference to "cooling water" is found in parent claim 5 which refers to the RIPs as circulating this "cooling water" inside the pressure vessel.

However, the heat exchangers recited in claim 8 are disposed in the lower drywell, not within the pressure vessel.

If the "cooling water" recited in lines 3-4 of claim 8 is actually the same "cooling water" recited in lines 9 and 10 of claim 5, there is no adequate description nor enabling disclosure of how and in what manner, the "cooling water" which is circulated only within the reactor pressure vessel, is somehow brought outside the reactor pressure vessel to be also circulated through the heat exchangers.

3. Claims 5-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The claims are vague, indefinite and incomplete, particularly in stating that the lower drywell is disposed in a lower portion of the reactor pressure vessel (note the discussion of this issue in section 2 above).

Claim 5 is vague, indefinite and incomplete as to what all is meant by and is encompassed by the phrase "a side of a motor portion of said reactor recirculation pump" and, as to how in what manner, said "side of a motor portion" is projected into the lower drywell (note the discussion of this issue in section 2 above).

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Claim 8 lines 3-4 recites "heat exchangers through which cooling water circulated by said reactor circulation pumps flows".

The only reference to "cooling water" is found in parent claim 5 which refers to the RIPs as circulating this "cooling water" inside the pressure vessel.

Claim 8 is hence vague, indefinite and incomplete as to whether or not the "cooling water" recited in lines 3-4 is the same as the "cooling water" recited in claim 5 and, if it is the same, as to how and in what manner, the "cooling water" which is circulated only within the reactor pressure vessel, is somehow brought outside the reactor pressure vessel to be also circulated through the heat exchangers.

There is consequently, no proper antecedent basis for the term "cooling water" in lines 3-4 of claim 8.

Claim 5 line 9 recites the term "reactor recirculation pumps" (plural). Hence there is no paper antecedent basis for the term "reactor recirculation pump" (singular) in claim 5, lines 11, 13.

Claims such as claims 8-10 recite "wherein" clauses (note the last three lines of each claim), the content of which, does not inherently follow from the structure recited.

These "wherein" clauses thus basically set forth a function or a method of operation.

Claims such as claims 8-10 are hence, vague, indefinite and incomplete in reciting a function or method of operation, but no structure to carry out said function.

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Additionally, as set forth in MPEP 2173.05 (p)(II), a claim (such as claims 8-10) which recites both apparatus and method steps of using the apparatus, is indefinite.

See Ex parte Lyell, 17 USPQ2d 1548.

In claim 5 line 19, the term "lager" should apparently be --larger--.

Terms such as "just above" (e.g. see claim 5, second line from the bottom) are relative, they can be given no definite meaning, it is not clear as to what all is encompassed thereby, and accordingly they render the claims vague and indefinite and the metes and bounds thereof are undefined. For example, it is not clear if such means immediately above (e.g. spaced an inch or two directly above the runner, directly overhead, vertically above, someplace above, etc.).

4. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims 8-10 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. Claims 8-10 embrace or overlap two different statutory classes of invention set forth in 35 U.S.C. 101 which is drafted so as to set forth the statutory classes of invention in the alternative only. See MPEP 2173.05 (p)(II) and Ex parte Lyell 17 USPQ 2d 1548 at 1551.

6. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the feature of the lower drywell being disposed in a lower portion of the reactor pressure vessel and, a "side of a motor portion" of the pump projecting into the lower drywell, the cooling water circulated

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by the pump being passed through the heat exchanger, must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5-10 are rejected under 35 U.S.C. 102(a) as being anticipated by applicants own admission of prior art in the specification.

The term "just above" in claim 5 does not define over the cutouts 19, 20 referred to in the specification on page 2 lines 1+ and shown in Fig. 9.

The other structure recited in the dependent claims is indicated by the specification as known in the prior art.

The last three lines of each of claims 8-10 recite a "wherein clause", the contents of which does not inherently follow from the actual structure recited. These "wherein" clauses are thus essentially method limitations or statements of intended or desired use.

Such limitations or statements do not serve to patentably distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 152 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

See MPEP 2114 which states:

A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ2d 1647.

Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.

Apparatus claims cover what a device is, not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

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As set forth in MPEP 2115, a recitation in a claim to the material or article worked upon, does not serve to limit an apparatus claim.

10. Claim 5 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by Japan 0231485.

Note Figs. 2 and 5 which show a pump or pump runner directly below each cutout. Note that the cutout is "formed to correspond" to the size of the pump or pump runner so as to allow passage therethrough.

11. Claims 5-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicants own admission of prior art in the specification, in view of any of Japan 3026996, Carelli et al or Isberg et al.

As indicated in section 9 above, the admitted prior art is considered as showing the claimed structure.

However, even if the claims were amended to recite the total number of pumps present and that the total number of cutouts is equal to the number of pumps, the claims would still not be patentable over the art.

While the admitted prior art refers to the use of 10 pumps, the secondary references show it is also known that one can use less pumps, such as six pumps or even four pumps.

It would have been prima facie obvious to have modified the primary reference by utilizing less pumps, such as only six pumps as shown by either Isberg et al or Carelli et al or, four pumps as shown by Japan 3026996, because these secondary

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references show that six pumps, or, four pumps respectively, are sufficient and because such is more economical by utilizing less equipment.

With this modification, one could provide a cutout for each of the six pumps or four pumps (pump runners), which would provide for ease of maintenance. There will clearly be room for six cutouts or, four cutouts since even applicants disclosure indicates there is enough space to provide 6 cutouts for a six pump system and four cutouts for a four pump system.

12. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicants own admission of prior art in the specification, in view of any of Japan 3026996, Carelli et al Isberg et al as applied to claims 5-10 above, and further in view of Japan 1202081.

Japan 1202081 show it is old and advantageous in this art to provide heat exchangers for the internal pumps and to provide a plurality of heat exchangers and a plurality of pumps such that each heat exchanger is connected to, two, pumps (e.g. see Figs. 1, 2, 6, 7).

Accordingly, it would have been prima facie obvious to have modified the primary reference by providing heat exchangers for the pumps (including providing different quantities of heat exchangers and pumps such that each heat exchanger is used for two pumps) in view of the above referenced teachings in Japan 120281 that such features are old and advantageous in this art.

13. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over applicants own admission of prior art in the specification, in view of any of Japan 3026996, Carelli

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et al or Isberg et al as applied to claims 5-10 above, and further in view of Yoshizumi et al.

Yoshizumi et al illustrate an advanced boiling water reactor (ABWR) having a plurality of reactor/recirculation internal pumps (RIPs), wherein the pumps that utilize a common power supply are positioned substantially symmetrical with respect to each other (col. 4 lines 48+).

Note also that Yoshizumi et al illustrate a plurality of internal pumps being driven from a single-train power supply system. See for example Fig. 26 which shows 6 internal pumps connected to a single-train power supply system (busbar A) and, 4 internal pumps connected to a single-train power supply system (busbar B).

Accordingly, in view of the above referenced teachings in Yoshizumi et al, it would have been prima facie obvious to have utilized a single-train power supply system for either the six pump system or the four pump system of the primary reference (as above modified) because such makes effective use of already existing technology and for economy.

14. Applicants claim for priority in the 2/6/04 Request for divisional application is noted, however, it appears improper as the oath in the parent case (which is the same as in the present case) states priority is not claimed.

Further, no certified priority document has been filed in the parent case (see page 3 of the 2/6/04 paper).

15. The other references cited further illustrate pertinent art.


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16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harvey Behrend whose telephone number is (703) 305-1831. The examiner can normally be reached on Tuesday to Friday.

If attempts to reach examiner by telephone are unsuccessful, the examiner's supervisor, Michael Carone, can be reached on (703) 306-4198. The fax phone number for the organization where this application or proceeding is assigned is (703) 306-4195.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-1113.

Behrend/vs
July 15, 2004



HARVEY E. BEHREND
PRIMARY EXAMINER